

SMALL BUSINESS ASSISTANCE: PROVIDING EFFECTIVE PRODUCTION AND TECHNICAL INFORMATION

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Abstract:

The purpose of the study was to determine the effectiveness of university counselors to provide necessary technical assistance to small businesses in the production and technical areas. Data was collected through a telephone survey to 20 university small business counselors; i.e., SBDC and others. Major findings were that agencies were providing assistance in raising, capital, star-up, marketing, and marketing research but less information and assistance to the manufacturing sector. Few counselors provided information on manufacturing and technical assistance but did refer small businesses to state and federal agencies, websites, inventor's associations, and others. Future research could be undertaken to determine specific manufacturing sources and data bases used by many universities in several states to provide a model for effective manufacturing assistance and information. Implications include an increased collaboration with local and regional programs to provide assistance and information in technical and manufacturing assistance. Previous studies referred to overall assistance and effectiveness of small business programs. This study shows the emphasis on small businesses as a vital part of our economy and the need to provide manufacturing and technical information to this sector.

Key Words: Manufacturing assistance, Production Assistance, Small Business and production, Technical information, SBDC.

1. INTRODUCTION

Efforts have continuously been made by education and government to encourage entrepreneurial development. This increased interest has been seen in off-campus initiatives to provide information and assistance to small business. Although much progress has been made, a continual effort has been made to improve such services. Much research has been conducted regarding success factors and methods to secure capital, but this study focuses on the need for technical and manufacturing assistance and information.

Organizations which provide technical assistance to small and medium firms include Small Business Development Centers, Small Business Institutes, Service Core of Retired Executives (SCORE), Enterprise Forums, and University-based entrepreneurship centers, special programs offered through the Chambers of Commerce, Business incubators, and others. These programs are concerned with many factors, one of which is technology transfer [12, 13].

2. LITERATURE SURVEY

The SBDC program is the Small Business Administration's (SBA) largest resource partner other than financial institutions. The SBDC's mission is to provide management and technical assistance to current and prospective owner and managers of small business. Services in the manufacturing area are: assistance in technology transfer, and research and development. [15]

A resource for high-tech economic development began in 1994 as the Small Business Technology Transfer (STTR) program began funding cooperative research and development (R & D) projects involving a small company and a researcher at a university or other institution. The proposed is to create an effective vehicle for moving commercially promising ideas from research institutions to the market. In addition, some state-level programs, which fund cooperative R & D between university researchers and small companies, reported success in stimulating economic development [3].

In addition, small to medium-sized firms have made valuable economic and social contributions through innovation [8]. However, they rarely possessed adequate research and development skills and generally need to acquire new technologies from external sources. Further, they suggested that businesses and higher education programs collaborate in their joint efforts. University-funded programs have been a significant source of information to benefit small business. Jones [8] found that small- and medium-sized firms rarely possess adequate R & D assets and generally needed to acquire new technologies from external sources. Therefore, he recommended collaboration between the firms and higher education [8].

Witten [16] concluded that only through new partnerships would economic developers be able to develop new resources, such as access to new technology, a skilled labor pool, and risk capital. For instance, the University of Arizona made a commitment to take a more aggressive role in economic development and identified five areas of importance. Two of these roles were in the areas of transferring technology and providing assistance through outreach programs. Hence, the University established new communication ties between its administrators and the business sector.

The Southwestern Pennsylvania Industrial Research Center's (SPIRC) mission is to improve the competitive performance of small manufacturers in the Pennsylvania area and enhance the region's overall manufacturing climate. The assistance ranges from informal referral to other providers, including operations reviews, product cost analysis, plant layout design, technology needs analyses, and customized on-site training programs [1].

Dunning [6] reported that the Industrial Research Liaison Program (IRLP) at Indiana University provides technical, research, and business assistance to over 800 Indiana companies each year. The IRLP provides several services, including providing assistance both obtaining low-cost applied research through the Partners in Applied Research Program and in obtaining information from over 350 databases through Indiana InfoNet.

Those firms need to create and sustain competitive advantages in order to survive in today's highly competitive business environment. [9]. More importantly, the literature shows that new product performance is directly related to the firm's success [4, 5, 9, 10].

Snyder [14] conducted a survey to determine the services provided by high-tech business usage of university-affiliated research centers. The study suggested that these centers were not used because small businesses were unaware of their existence or services and were often reluctant to use any new external assistance.

As new products are vital for the success of a new firm, this pilot study focuses on the counseling efforts and needs of small businesses in manufacturing and technology.

3. METHODOLOGY

This research is a descriptive survey to determine the nature of counseling as related to the manufacturing sector. A convenience survey was conducted to determine the need for manufacturing assistance and to describe types of counseling available. The survey

instrument was carefully developed with input from counselors. The sample consisted of 20 telephone calls to directors at two types of centers: (1) Small Business Development Centers (SBDC) and (2) Small Business Institute (SBI). Specifically, this research asked the following questions:

1. What types of businesses come to centers for counseling?
2. How often do people seek manufacturing assistance?
3. What types of assistance are provided?
4. What types of information are given to the small businesses?
5. Where do counselors send their clients for manufacturing and technical assistance?
6. What types of assistance are needed?

What is the degree of need for certain information (business, technical, prototyping, commercialization, integrating new technologies, and research)?

3.1 Institutional demographics

The counselors were housed in colleges and universities with enrollments from less than 2,000 to over 30,000. The majority were medium-sized institutions with enrollments from 2,000-20,000 as shown in Table I.

Table I: Enrollment at the College.

Number of Students	Number	Percent
Less than 2,000	2	11%
2,000-4,999	5	28%
5,000-9,999	4	22%
10,000-20,000	4	22%
20,000-30,000	1	5%
30,000 & over	2	11%
Total	18	100%

The majority of counselors were from either a junior or community college. In fact 60% of the respondents were counselors at junior or community colleges as shown in Table II.

Table II: Types of Institutions.

Institutional	Number	Percent
Community/junior college	12	60
4-year university	8	40
Total	20	100%

All counselors reported they were connected with public institutions.

4. SURVEY RESULTS

4.1 Types of Clients

Start-up firms, service, and retail organizations seemed to utilize small business counselors more often than other segments. However, seven of the counselors indicated that small businesses also desired advice and information on production and manufacturing assistance.

Table III indicated the major type of company was a start-up, followed by service, and retailing.

Table III: Types of Clients Needing Assistance.

Type of Client	1st	2nd	3rd
	No.	No.	No.
Manufacturing	0	1	6
Startup company	8	1	8
Retailing	3	13	2
Service	9	5	2
Wholesaling	0	0	0
Construction	0	0	0

4.2 Types of Assistance

The major types of needed assistance requested by 70% of the respondents were in the area of raising capital. However, 65% desired assistance regarding a business plan, and 45% indicated a need for marketing research assistance. Virtually none of the respondents mentioned manufacturing and technical assistance (See Table IV below).

Table IV: Types of Needed Assistance Needed.

Assistance Needed	Number of Mentions	Percent
Raising capital	16	80%
Business plan	13	65%
Marketing research	9	45%
Legal/licensing/patents	7	35%
Marketing/advertising	4	20%
Accounting/taxes	3	17%
Information system	1	5%
Manufacturing/technical	0	0%
Other*	7	65%

4.3 Manufacturing/Technical Information

Only 10% of the respondents had clients who frequently asked for manufacturing and technical assistance. However, 15% of the counselors stated occasionally, and 75% reported they had clients who seldom requested manufacturing assistance (See Table V).

Table V: Rate of Occurrence for Manufacturing/Technical Assistance
Manufacturing/Technical Assistance.

Frequency	Number of Mentions	Percent
Seldom	15	75%
Occasionally	3	15%
Frequently	2	10%
Often	0	0%
Total	20	100%

4.4 Types of Manufacturing Assistance Needed

Respondents reported that they desired assistance in the areas of production, inventory control, and patent assistance. Developing a prototype, forecasting, manufacturing process, and location were also mentioned as shown in Table VI.

Table VI: Types of Manufacturing Assistance

Manufacturing Assistance	Number of Mentions	Percent
Production	7	35%
Inventory Control	2	10%
Patent	9	45%
Prototype	3	15%
Idea for new product	4	20%
Forecasting	2	10%
Incubator	1	5%
Other*	8	40%

*Other includes more efficient managing skills, Business expansion, location assistance, coordinating production, management assessment centers and manufacturing processes

4.5 Manufacturing Assistance

A small majority, 55%, stated they have workshops for manufacturing and technical assistance. Also, approximately 25% send to another manufacturer. Also, Table VII shows that 4 respondents, 20%, indicated they send the small businesses to a state technical agency.

Table VII: Types of Manufacturing Assistance Provided.

Types of Assistance	Number of Mentions	Percent
In-house workshops	11	55%
Send to another manufacturer	5	25%
State technical assistance	4	20%
Incubator assistance	2	10%
Technical specialty center	2	10%
SBA technical assistance	0	0%
Small Business Innovation Research (SBIR)	0	0%
Federal technical assistance	0	0%
Inventor's organizations	0	0%
Other*	10	75%

*Other includes: Manufacturing assistance center, one-on-one help, American Business Disk, TMAC, and business accelerators

4.6 Types of Information

Many counselors, 45%, referred the small businesses to web sites. Furthermore, 25% send clients to a state agency, while 20% send them to an inventor's association.

Table VIII: Types of Information Given.

Types of Information	Number of Mentions	Percent
Web sites	9	45%
SIC Codes	1	5%
Inventor's associations	4	20%
State assistance	5	25%
SBA technical assistance	2	10%
Other faculty	2	10%
Engineering department	1	5%
Other*	13	65%

*Other includes: publications, information on business plans, E-commerce assistance, BIC (Business information center) to find suppliers and customers, brochures, and research network books

5. CONCLUSIONS

The findings show service and retail organizations seem to utilize small business counselors more often than other segments. However, some counselors indicated their clients desired advice and information in the manufacturing areas. The major types of needed assistance were: (1) raising capital; (2) business planning; and (3) marketing. A total of 74% of the respondents indicated that seldom did a client come in for counseling relating to manufacturing and technical assistance. However, respondents mentioned some small business owners or potential owners needed help in the production processes. A small majority, 55%, stated they have workshops in manufacturing processes or had received some type of technical assistance. Approximately 25% of the counselors reported that they send clients to another manufacturing center. Also, 20% indicated they send the small businesses to a state technical agency. Many counselors, 45%, refer the small businesses to web sites. Also, 35% sent clients to a state agency, while 20% send them to an inventor's association.

This research illustrates that small businesses seek assistance from agencies mainly in marketing, start-up, business planning, and methods of securing capital. Few counselors provided information on manufacturing and technical assistance but did refer small businesses to other agencies. Many referred them to state, federal, and other assistance areas. Institutions and agencies providing assistance should be familiar and knowledgeable of specific agencies that provide manufacturing assistance.

College and university business centers are providing a valuable role in assisting entrepreneurship development, but the manufacturing assistance area seems to be lacking. Perhaps institutions should provide newer services and information databases to increase awareness and effectiveness of overall programs and services. Such improvements would be (1) closer associations with technical agencies; (2) collaboration with manufacturing; (3) information networks; and (4) joint clearing house that identifies existing state and federal programs. Colleges and universities could benefit from the results of the study regarding effective outreach programs to assist and provide timely information to this manufacturing sector.

Institutions of higher education could assist with new product development, production systems, logistics, and other initiatives. Centers should continue to build partnerships with potential business and established industries, helping them to improve technical expertise in new and improved manufacturing techniques.

More counselors could be aware of the Small Business Innovation Resource (SBIR) Program and others. The SBIR's major purpose is to stimulate technological innovation in the private sector, strengthen the role of small business in meeting federal research or research and development(R/R&D) needs, increase the commercial application of sponsor-supported research results, foster and encourage participation by socially and economically disadvantaged small business concerns and women-owned business concerns in technological innovation. The objective of Phase I is to establish the technical/scientific merit and feasibility of the proposed R/R&D efforts in the development of projects that have potential for commercialization.

Perhaps assistance providers could collaborate to enhance their overall effectiveness of their programs. Further, they should examine the possibility of offering programs in the manufacturing assistance area. It seems appropriate that institutions of higher education should continue to build bridges and explore methods to assist the small business sector in technology transfer and commercialization.

Higher education is providing a valuable role in assisting entrepreneurship development through centers, programs and several other areas. Community colleges offer important services, mainly in the continuing education, work force training, and consulting, but few provide assistance in engineering, prototyping, patent, and technical assistance. Manufacturing assistance, applied research, prototyping, and commercialization should be seen as an important factor in this quest. One of the weaknesses of the business programs is its inability to hire technical personnel because of scarcity and cost to the center or college

of business. If business centers are to enter into this area of consulting, more highly skilled employees will be necessary.

6. LIMITATIONS AND DIRECTION OF FUTURE RESEARCH

Though the research provides interesting insights into the effectiveness of providers in manufacturing technology, a major limitation does exist. Although the theory proposed in this study may have universal application, the empirical tests rely on data collected from only 20 institutions of higher education. The intent of the research was to provide a pilot study for further research and to develop a hypothesis. While no research has identified that this area is fundamentally different, a larger sample would give more reliable data.

The research suggests that further analysis is warranted, and questions emerge from this study. However, this pilot study shows the need for a more in-depth study. Such future research could be undertaken to determine specific manufacturing sources and data bases used by many universities in several states to provide a model for effective manufacturing assistance and information.

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